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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,061	01/05/2005	Wataru Matsumoto	2611-0229PUS1	5128
2292 7590 07/17/2006				
BIRCH STEWART KOLASCH & BIRCH				
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FALLS CHURCH, VA 22040-0747				
			EXAMINER	
			RIZK, SAMIR WADIE	
			ART UNIT	PAPER NUMBER
			2133	

DATE MAILED: 07/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/520,061	Applicant(s) MATSUMOTO, WATARU	
	Examiner Sam Rizk	Art Unit 2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/5/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

- Response to the applicant's amendment dated 3/15/2006
- Amended claims 1-13 have been submitted for examination
- Amended claims 1-13 have been rejection

### ***Double Patenting***

1. In view of the applicant request, filed on 3/15/2006, to hold in abeyance the double patenting rejections of claims 1,7-12 and 13 for being unpatentable over claims 1 and 6 of copending application no. 10/482,815, the Examiner maintains the double patenting rejection as in the previous office action filed 10/19/2005.
2. In view of the applicant request, filed on 3/15/2006, to hold in abeyance the double patenting rejections of claims 1,7-12 and 13 for being unpatentable over claims 1 and 10 of copending application no. 10/518,444 the Examiner maintains the double patenting rejection as in the previous office action filed 10/19/2005.

### ***Drawings Objections***

3. In view of the applicant amended drawings, filed on 3/15/2006, all objections to the drawings are withdrawn.

### ***Claim Objections***

4. In view of the applicant amended claims 1,2 7-13, filed on 3/15/2006, all objections to the claims 1,2 and 7-13 are withdrawn.

***Claim Rejections - 35 USC § 112***

5. In view of the applicant amended claims 1 and 2, filed on 3/15/2006, all objections to the claims 1 and 2 under 35 USC § 112 are withdrawn.

***Response to Arguments***

6. Applicant's arguments, see pages 10-14, filed on 3/15,2006, with respect to claim 1-13 have been fully considered and are persuasive. The claim rejections of claims 1-13 under 35 USC § 103 have been withdrawn.

***Allowable Subject Matter***

7. Claims 1-13 are allowable.

The following is a statement of reasons for the indication of allowable subject matter:

8. The prior Art of record, in particular, De Souza US patent 6,789,227 and in view of the applicant admitted prior art teaches:
- A method of generating a check matrix for a low-density parity-check code in which at least one of weights of a column and a row is not uniform, the method comprising;
  - determining a coding rate;
  - generating a basic matrix that satisfies conditions that weights of rows and columns are constant and number of cycles is equal to or more than six;

- determining number of columns and number of rows of the check matrix to be finally obtained;
- substituting rows of the basic matrix created, based on a specific relational equation;

However, the prior art do not teach, suggest, or otherwise render obvious:

- searching provisionally an ensemble of row weights and column weights of the low-density parity check code by executing a Gaussian approximation based on a predetermined condition before a row deletion;
- deleting rows of the basic matrix after the substituting in order from a bottom by considering the number of rows of the check matrix to be finally obtained;
- searching a final ensemble of row weights and column weights of the low-density parity check code by executing the Gaussian approximation based on a predetermined condition after the row deletion; and
- dividing at random the row weights and the column weights of the basic matrix after the row deletion based on the final ensemble.

9. Claims 2-12 depend from claim 1.

10. Claim 13 has a similar language to claim 1.

**Conclusion**

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Rizk whose telephone number is (571) 272-8191. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone

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number for the organization where this application or proceeding is assigned is  
(703) 872-9306.

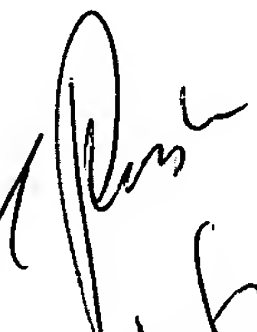
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Sam Rizk, MSEE, ABD

Examiner

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6/30/06



GUY LAMARRE  
PRIMARY EXAMINER